



The Intersection of Technology and Modern Farming

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ABSTRACT—

Today, mobile phones are used everywhere, Android is the dominant operating system that dominates the mobile operating system market with more than 80% market share, and most of the applications are free. We are targeting the horticulture sector where we can use smartphones to provide farmers with details of all the types of produce they can harvest and the most efficient way to get their produce. All this information is also provided in local audio format to make it easier for farmers to understand. For example, farmers in India can get information in multiple languages with just a few keystrokes, which is very useful. Even illiterate people can easily use this program. By defining the platform that farmers can use to develop their business products, increase the income and quality of goods that people need, and provide opportunities for startups and other intermediary parties to participate in the transit and quality assurances of products that are to be delivered to end customers for consumption prior to expiration, this paper provides information about empowering and enriching the farmer's occupation. This paper primarily focuses on the advantages that come with having farmers earn a solid living and consumers consuming high-quality food, as well as their daily struggles with society, the environment, and government initiatives. Additionally, this essay explains how farmers can profit from and enter the digital age with the aid of contemporary. Benefits from the E-commerce Marketplace's involvement in transactions include convenience of access to the website, knowledge of the availability of items, and transaction facilitation.

Keywords— E- Farming, Farmer, Benefit, Technology, Government, Platform.



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Fig.1. Drone is helping in farming.

INTRODUCTION :

Our project is being developed through web development; its technology is comparable to everyday websites like Facebook and Gmail, among others. In this way, the tech-savvy society of today can take advantage of our services via their mobile devices. We use background technology to structure content in the appropriate locations, style and align it to best suit our tastes, validate it through third-party services, and store and organize it in redundant ways, which we can then retrieve when needed.

This farming website provides a means of linking several endpoints in the sales industry, such as agents and customers (shipping only). This theory supports and encourages us during the project development phase and also helps farmers take advantage of the fixed price market and the introduction of the modularity idea in the webpage design. One of the most recent technological advancements is the e-commerce marketplace. The community has great needs for the advancement of current information technology. Thus, one of the media that agriculture must be able to use to boost revenue is information technology.

All facets of business operations and markets that are engaged through the use of websites and internet technologies are included in e-commerce. Four categories—lowering transaction costs, intermediation, merging e-commerce services, and offering e-commerce support services—are used by agricultural e-commerce websites to modify economic service aims.

LITERATURE REVIEW

Government efforts to support agriculture are continuing but ineffective, thus our strategy has shown to be successful in boosting a nation's economy. This can benefit society as a whole or, in this example, farmers. E-commerce has an impact on our conventional methods of doing things. Research has indicated that Indian farmers are adopting e-commerce methods; a survey conducted in the Trichy District of Tamil Nadu, India, revealed that e-commerce practices in agriculture are still in their infancy. Information technology establishes very weak basis, and research studies pertaining to the creation of websites for online businesses in agriculture, such as agricultural research in Taiwan, are still tiny in scale. This has helped us to comprehend the necessity for digitization in the sphere of agriculture. Our strategy has proven to be beneficial in boosting the economy of a country, benefiting farmers in this case as well as society at large.

Government efforts to empower agriculture are continuous but ineffective. Our customary methods of doing things are impacted by e-commerce. According to studies, e-commerce methods are being adopted by Indian farmers. A survey conducted in the Trichy District of the State of Tamil Nadu, India, revealed that e-commerce practices in agriculture are still in their infancy. Taiwanese agricultural research, for example, is one of the few fields where research on website design for online commerce is still done on a limited scale, with information technology playing a relatively weak role. This has made it easier for us to comprehend why the farm sector needs to digitize.



Fig.2. Control of multiple devices.

E-farming websites have become essential tools that are transforming the agriculture industry by giving farmers and stakeholders easier access to markets, effective means of communication, and resource allocation. The objective of this literature review is to examine the different aspects, consequences, and difficulties related to e-farming websites that have been reported in previous academic studies. Websites dedicated to e-farming act as links between farmers, consumers, and markets, providing better access to financial services, information, and agricultural technology improvements.

Smith et al. (2018) claim that these platforms have democratized access to agricultural information by providing farmers with best practices, weather forecasts, and real-time market data, which has increased production and profitability. *Effects on Supply Chain Efficiency and Market Accessibility* Johnson and Brown's (2020) research brought to light the way e-farming platforms have revolutionized market accessibility. By doing away with middlemen, these platforms allow direct farmer-to-consumer interactions, cutting costs and guaranteeing more equitable prices for agricultural products. Moreover, e-farming websites optimize supply chains, reducing waste and raising the general effectiveness of agricultural markets. E-farming websites are not without difficulties, despite all of their advantages. Widespread adoption is hampered by cybersecurity concerns and limitations in farmers' digital literacy, according to Singh and Patel (2021). Furthermore, connectivity problems caused by inadequate infrastructure in rural locations limit access to these platforms. Future study should concentrate on addressing cybersecurity concerns, developing digital literacy among farmers, and strengthening last-mile connectivity in order to overcome obstacles and utilize the potential of e-farming platforms.

DESCRIPTION

Our project is around the creation of a website, which requires a variety of skills, patience, and time to properly utilize the resources and processing power available. Digital platforms such as e-farming websites are transforming the agricultural industry by acting as multipurpose centers that link farmers, buyers, sellers, and agricultural enthusiasts inside a virtual ecosystem. These websites function as online markets, providing a wide selection of resources and tools that are specifically designed to satisfy the requirements of contemporary agriculture.

Fundamentally, these platforms enable farmers by giving them access to a multitude of important data that is essential for improving their farming methods. Real-time market trends, weather forecasts, professional guidance on sustainable agricultural methods, and introductions to cutting-edge technologies are all provided by them. Farmers are better able to make decisions as a result of this information accessibility, which raises output and profitability

.The way that e-farming websites are changing the dynamics of agricultural markets is one of their most notable effects. These platforms remove needless middlemen by enabling direct exchanges between farmers and consumers, guaranteeing more equitable prices for agricultural goods. They also optimize the supply chain, cutting down on waste and inefficiencies during the distribution process. Even with their potential for revolution, e-farming platforms have obstacles that prevent their broad acceptance. One major obstacle is cybersecurity concerns, particularly when managing sensitive agricultural data. Furthermore, the digital gap persists, as rural people encounter restricted internet access and insufficient technological infrastructure, impeding their smooth assimilation into these platforms.



Fig.3. Use of AI

Fostering better acceptability and utilization of e-farming websites requires an understanding of user behavior and incentives. Their attractiveness can be greatly increased by creating user-friendly experiences and intuitive interface designs. Furthermore, increasing farmers' digital literacy will be crucial to increasing their accessibility through educational efforts. Incorporating developing technologies is what e-farming websites will look like in the future. By integrating IoT devices, data analytics, and artificial intelligence, these systems can be revolutionized and provide farmers with more individualized and data-driven solutions.

These developments have the potential to improve resource management and farming techniques even further. In conclusion, e-farming websites act as sparks for agricultural innovation by providing a virtual entryway to priceless information and contacts among other farmers. Realizing their full potential and guaranteeing sustainable agricultural development will depend heavily on overcoming obstacles through inclusive methods and technology improvements.

PROPOSED WORK

Our front-end application was created using HTML, CSS, and JavaScript, while the back-end components were created using PHP and MySQL for database management and pre-processing. Plug-ins were utilized to add functionality, and open-source tools such as PHP and MySQL were utilized to streamline the development process. Workflow was monitored to find fresh concepts and features for the website, and assistance was occasionally required.

Mistakes were discussed with teams via online web chats and video conferences in order to fix them. We have developed our product locally using cross-platform tools like XAMPP, and we have audited it using open-source toolkits like nucleus and burpsuite, which are used by enterprise businesses. It demonstrates the genuine and dependable good outcomes they provide.

PROPOSED METHODOLOGY

Creating an intuitive website would help farmers and consumers market their goods and products with more ease. Setting a fixed price together with the farmers made it difficult for middlemen to steal, and this has also shown to be advantageous to us, the farmers, as we will handle the logistics of delivery. As a solution to this issue, we will employ full stack development to create a website that is as clear as feasible in an effort to earn farmers' trust and establish a dependable business through our partnership. This study helps us comprehend the issues farmers experience and the difficulties they face in implementing their business plans. With its responsive design, it can be utilized on mobile devices and is simple to use and maintain on web platforms. It additionally leads In order to lower their payment to the website and encourage regular use of this platform, commission rates are subject to change. When an issue emerges, we will assist with customer support and perks.

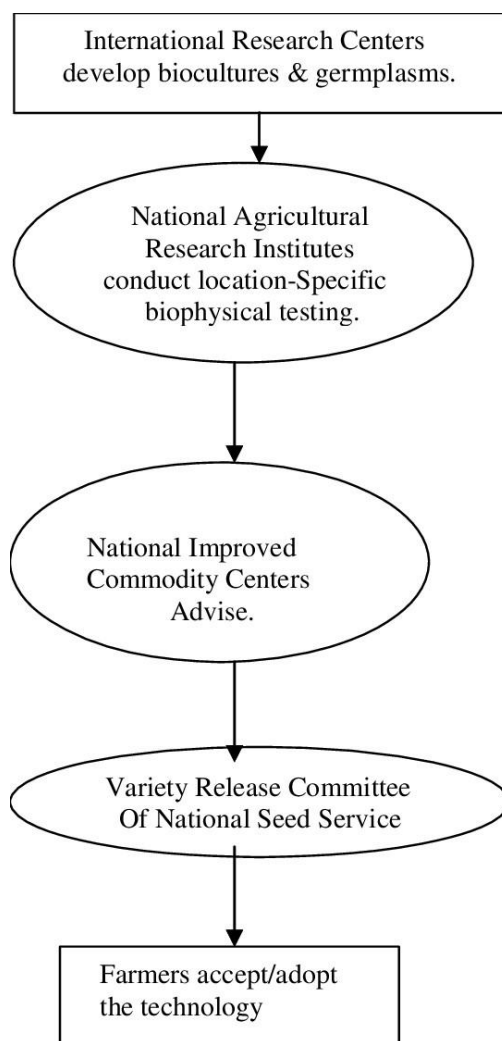


Fig.3. Proposed methodology.

Previous research has demonstrated that similar designs fail because more benefits accrue to middlemen and compliance conflicts with legal requirements and design defects; nonetheless, we were considering and putting these issues into practice as solutions.

IMPLEMENTATIONS

to gather and thoroughly analyze the project's overall requirements. Create the codes for each module's specific functionality to run the entire site in modules. Test the modules to ensure appropriate operation. Integrate the modules to the entire site to facilitate e-commerce and help farmers increase their earnings.

- Sellers and Vendors create accounts. Following registration, users submit the products and other information pertaining to the things they offer on the e-commerce site.
- The administrator verifies and authorizes the merchandise.
- Customers can place orders on the products' website only when they have been approved. Orders placed by customers are automatically received by sellers. Once an order is placed, we check the stock availability by talking to farmers; if the product is out of stock, we update the portal accordingly.
 - The order would be picked up from the seller's location and delivered to the customer for fulfillment.
- Following order delivery and shipping, the defined amount is sent to the seller's account and the shipment is confirmed.

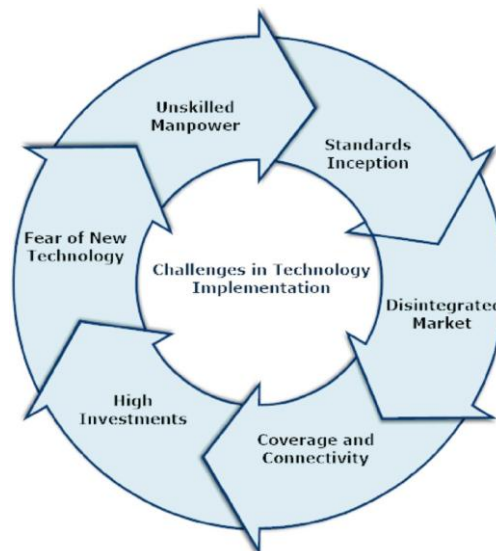


Fig.4. Difficulties in implementation.

CONCLUSION

It changed from a nebulous framework to the most practical and fruitful structure that could be used as a real-time production site for effective project use. Added more capabilities to the backend logging of activities for necessary mission-critical services. More attention is paid to backends in order to efficiently organize data for usage in frontend applications.

Our work has been completed, and the requirements necessary to run the entire project with an approximate 8 rating for the website have been met. This leads us to the crucial stage that follows development, when testing is integrated into our website to find any known vulnerabilities.

Our site was also tested to make sure there were no problems, and the system should be able to handle heavy demands. Peer discussions are organized to correct mistakes.

We have in fact developed numerous strategies for developing and analyzing requirements, created our product from the ground up, and made it available to farmers and other consumers.

We also provided opportunities for people with start-up ideas to collaborate in order to support their careers, as well as for them to participate in the digital era. Their main influence is on farmers' empowerment through better decision-making, increased output, and stable economies. Additionally, by cutting out middlemen and streamlining supply chains, e-farming websites have changed how accessible markets are, resulting in more equitable prices and less waste.

However, obstacles to their wider adoption still exist, including cybersecurity threats, deficiencies in digital literacy, and infrastructure limits in remote areas. It will be crucial to overcome these obstacles in order to guarantee inclusivity and optimize these platforms' advantages for all parties involved.

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